



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,913	10/23/2003	Mike Blossfeld	TRW(BCS)6721	6535

7590 06/06/2005  
TAROLLI, SUNDHEIM, COVELL, & TUMMINO L.L.P.  
1111 LEADER BLDG.  
526 SUPERIOR AVENUE  
CLEVELAND, OH 44114-1400

EXAMINER

GUSHI, ROSS N

ART UNIT	PAPER NUMBER
----------	--------------

2833

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/691,913

Applicant(s)

BLOSSFELD, MIKE

Examiner

Ross N. Gushi

Art Unit

2833

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 4/5/05
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 9-20, 22-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9-20, 22-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☒ Other: Attachment

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/5/05 has been entered.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 9, 11-19, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 451 674 B1 ("ELCO") in view of Wurster U.S. No. 5,823,830 ("Wurster"). Per claim 1, ELCO discloses (see attachment) a compliant pin adapted to be pressed into a through-hole of a printed circuit board and have electrical contact with opposing surfaces of a side wall of the through-hole, said compliant pin comprising (see attachment) : a portion insertable in the through-hole, said portion comprising spaced deflectable beam portions having outer surfaces and providing a frictional engagement between said beam portions and the side wall, the frictional engagement providing a retention force for retaining said portion in the through-hole; said portion comprising an

opening extending through said portion and defining inner surfaces of said beam portions opposite said outer surfaces, said inner surfaces consisting essentially of a plurality of blended cylindrical surfaces, said interface portions each including a cylindrical inner surface comprising a portion of said inner surface of its respective beam portion, said inner surface and outer surface of each interface portion being convex and facing away from each other, said interface portions having a cross-sectional area that is greater than a cross-sectional area of a remainder of the beam portion.

ELCO may not have a cylindrical outer surface. Wurster discloses a cylindrical outer surface (see figure 4). At the time of the invention, it would have been obvious to modify the ELCO outer surface to be slightly bowed or cylindrical as taught in Wurster. The suggestion or motivation for doing so would have been to improve the frictional engagement of the pin as taught in Wurster (see col. 3, lines 45-65) and as is well known in the art.

ELCO may not disclose that the outer surfaces are spaced apart a distance greater than the spacing of the opposing surfaces of the side wall. Wurster discloses a compliant pin and discusses the well known feature of outer surfaces 54 spaced apart a distance greater than the spacing of the opposing surfaces of the side wall, including beam portions engaging the side wall and deflecting toward each other when said portion is inserted in the through-hole and providing a frictional engagement between the beam portions and the side wall, the frictional engagement providing a retention force for retaining said portion in the through-hole.

At the time of the invention, it would have been obvious to have the ELCO compliant pin tail be wider than the hole width as taught in Wurster. The motivation for doing so would have been to frictionally engage the through hole walls as taught in Wurster and as is well known in the art.

Regarding claims 2, 3, and 4, variations in relative dimensions, which do not specify a device which performs or operates any differently from the prior art, do not patentably distinguish applicant's invention. Gardner v. TEC Systems, Inc., 725 F.2d 1338 (Ct. App. Fed. Cir. 1984). Wurster discusses how the various thicknesses, radii, and dimensions can be varied to adjust the holding power of the pins, to minimize emissions and pickups, to adjust the contact area of between the board and pin. See Wurster columns 2-5. At the time of the invention, it would have been obvious to vary the thicknesses, radii, and other dimensions of the ELCO compliant section as desired to achieve the desired holding force and contact area.

Regarding claim 5, where the central inner surface (as at 11) of ELCO may not be exactly cylindrical, slight variations in the shape or curvature of the surface at 11 would have been a matter of engineering design choice and such slight variations in the shape would not have been patentably significant. See In re In re Dailey, 149 USPQ 47 (CCPA 1966).

Per claim 9, the compliant pin has a longitudinal axis and a lateral axis extending perpendicular to the longitudinal axis, said cylindrical surfaces having axes that extend perpendicular to both the longitudinal axis and the lateral axis of said contact.

Claims 11-19 and 22 are rejected for the reasons pertaining to claims 1-5 and 9.

Claims 10, 20, and 23-25, are rejected under 35 U.S.C. 103(a) as being unpatentable over ELCO in view of Wurster as in claims 1 and 11 in view of Yamashita. Regarding claims 10 and 20, ELCO does not show legs. Yamashita discloses legs. At the time of the invention, it would have been obvious to include legs on the ELCO pin as taught in Yamashita. The suggestion or motivation for doing so would have been to limit insertion depth of the pin, as taught in Yamashita and as is well known in the art.

Regarding claims 23-25, to the extent that ELCO does not show the board, Yamashita shows that the pin may extend beyond the bottom of the board. At the time of the invention, it would have been obvious to use the ELCO pin (as modified by Wurster) on boards having thicknesses as desired, including thicknesses where the pin extends below the bottom of the board as taught in Yamashita. The choice of what board or board thickness to be used would have been a matter of design engineering choice without patentable significance given that the board is not claimed.

### ***Response to Arguments***

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ross Gushi whose telephone number is (571) 272-2005. If attempts to reach the examiner by phone are unsuccessful, the examiner's

Application/Control Number: 10/691,913

Page 6

Art Unit: 2833

supervisor, Paula A. Bradley, can be reached at 571-272-2800 extension 33. The phone number for the Group's facsimile is (703) 872-9306.

  
**ROSS GUSHI**  
**PRIMARY EXAMINER**

